



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,131	01/02/2002	James Larry Peacock	BEA920010037US1	8794

30011 7590 01/11/2005

LIEBERMAN & BRANDSDORFER, LLC
12221 MCDONALD CHAPEL DRIVE
GAITHERSBURG, MD 20878

EXAMINER

AUVE, GLENN ALLEN

ART UNIT	PAPER NUMBER
----------	--------------

2111

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/040,131

Applicant(s)

PEACOCK, JAMES LARRY

Examiner

Glenn A. Auve

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 9 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. After reviewing applicant's specification and drawings it is unclear how the shutter assembly can operate as described by applicant in paragraphs [0021-0022]. Figures 3-5 show the shutter assembly indicated as element 90 which is connected to cylinder 80. The rotation of the cylinder either removes or applies the end 92 of shutter assembly to the switch 100. Applicant's specification states that element 92 being brought into contact with the switch element 100 causes power to be applied to the card while removal of element 92 from switch 100 causes power to be removed. However, downward motion of sensor 60 upon contact with the inserted card would cause counterclockwise rotation of the cylinder thus forcing the shutter assembly upward breaking contact with switch 100. Removal of the card would cause upward motion of the sensor 60 because the spring 120 will exert an upward force on the sensor element. This motion will cause clockwise rotation of the cylinder 80 forcing the shutter assembly 90 downward and into contact with switch 100. This is the exact opposite of applicant's explanation of the operation of these elements. Thus it is not clear how the shutter assembly actually operates to apply and remove power from the card slot in response to movement of the sensor.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8,11-17,19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Klein et al., U.S. Pat. No. 6,138,194 (cited by applicant).

As per claim 1, Klein shows a sensor to detect motion of a computer module (fig.4,406); and a switch (as indicated in fig.2,206) to manage delivery of power to a connector holding said module, wherein initial motion of said module prior to disconnect from said connector activates said switch and said sensor is located external to said connector (also in figs. 2,4 and 6 and in col.4, line 59 – col.5, line 7 and col.6, lines 8-32, wherein when the sensors detect the beginning of removal of the card the switch is activated to remove power from the slot). Klein shows all of the elements recited in claim 1.

As for claim 2, the argument for claim 1 applies. Klein also shows a sensor actuator adapted to engage a shutter assembly actuator (in switch 406, wherein the switch inherently contains a shutter mechanism of some sort in the plunger style switch in which the sensor actuator is the portion of the switch engaged by the circuit card and the shutter assembly actuator is the internal pin portion of the switch which is engaged and signals the controller that the card has been inserted, evidence of such a motion detecting switch is provided by Castellanet et al., U.S. Pat. No. 4,982,106). Klein shows all of the elements recited in claim 2.

As for claim 3, the argument for claim 2 applies. Klein also shows a shutter assembly in communication with said shutter assembly actuator and said switch (in switch 406 as noted above where the shutter assembly is the internal portion of the switch which is engaged by the shutter actuator and signals the controller that the card has been inserted). Klein shows all of the elements recited in claim 3.

As for claim 4, the argument for claim 3 applies. Klein also shows that actuation of said sensor activates said shutter assembly actuator and vertically adjusts said shutter assembly to alter communication of said shutter assembly with said switch (in cols. 4-6 as noted above). Klein shows all of the elements recited in claim 4.

As for claim 5, the argument for claim 4 applies. Klein also shows that said switch sends a signal to a control circuit of said connector in response to movement of said shutter assembly (in cols. 4-6 as noted above). Klein shows all of the elements recited in claim 5.

As for claim 6, the argument for claim 5 applies. Klein also shows that said control circuit provides power to said connector when said shutter assembly is in communication with said switch (in cols. 4-6 as noted above). Klein shows all of the elements recited in claim 6.

As for claim 7, the argument for claim 5 applies. Klein also shows that said control circuit removes power from said connector when communication of said shutter assembly with said switch is removed (in cols. 4-6 as noted above). Klein shows all of the elements recited in claim 7.

As for claim 8, the argument for claim 1 applies. Klein also shows that said switch is selected from the group consisting of: an optical switch, a magnetic switch, and a mechanical switch, and combinations thereof (in cols. 4-6 as noted above). Klein shows all of the elements recited in claim 8.

As for claim 11, the argument for claim 2 applies. Klein also shows that said actuator is selected from the group consisting of: ratchet teeth, a pin, a spring, a magnet, an electromagnet, and combinations thereof (inherent in that the switch 406 must be attached to some sort of spring and pin mechanism). Klein shows all of the elements recited in claim 11.

As per claim 12, Klein shows (a) detecting motion of a computer module through a sensor, wherein the sensor is external to said connector (sensor switch 406); and (b)

disconnecting power from said connector holding said module upon motion of said module prior to disconnecting said module from said connector (at least in fig.6 and cols. 4-6 as noted above). Klein shows all of the steps recited in claim 12.

As for claim 13, the argument for claim 12 applies. Klein also shows that said sensor includes a shutter assembly in communication with a power switch of said connector (in switch 406 as noted above for claim 2). Klein shows all of the steps recited in claim 13.

As for claim 14, the argument for claim 13 applies. Klein also shows sending a signal to a control circuit of said connector in response to actuation of said sensor (cols. 4-6 as above). Klein shows all of the steps recited in claim 14.

As for claim 15, the argument for claim 14 applies. Klein also shows that the step of sending a signal to said control circuit includes providing power to said connector when said shutter assembly is in communication with said switch (cols. 4-6 as above). Klein shows all of the steps recited in claim 15.

As for claim 16, the argument for claim 14 applies. Klein also shows that the step of sending a signal to said control circuit includes disconnecting power from said connector when communication of said shutter assembly with said switch is removed (cols. 4-6 as above). Klein shows all of the steps recited in claim 16.

As for claim 17, the argument for claim 13 applies. Klein also shows that said switch is selected from the group consisting of: an optical switch, a magnetic switch, a mechanical switch, and combinations thereof (fig. 4 and cols. 4-6). Klein shows all of the steps recited in claim 17.

As per claim 19, Klein shows a sensor (406) to mechanically detect motion of a computer module; a switch to manage delivery of power to a connector holding said module (206), wherein initial motion of said module prior to disconnect from said connector activates said switch; a sensor actuator (part of the switch that engages with the card) adapted to engage

Art Unit: 2111

a shutter assembly actuator (internal pin portion of the switch); and a shutter assembly (the portion of the switch which communicates the card detection signal to the controller) in communication with said shutter assembly actuator and said switch to communicate motion of said module with said switch (all in fig. 4 and cols. 4-6 as noted above, and also inherent in the switch 406 as noted for claim 2). Klein shows all of the elements recited in claim 19.

As for claim 20, the argument for claim 19 applies. Klein also shows that said actuator is selected from the group consisting of: ratchet teeth, a pin, a spring, a magnet, an electromagnet, and combinations thereof (inherent in that the switch 406 must be attached to some sort of pin and/or spring mechanism). Klein shows all of the elements recited in claim 20.

Response to Arguments

4. Applicant's arguments filed November 18, 2005, have been fully considered but they are not persuasive.

Applicant argues that Klein does not show locating the sensor external to the connector. However, Klein clearly shows an embodiment in which the sensor is external to the connector in figure 4 and col.2, lines 27-29, as well as in Klein's claim 8. Klein shows several embodiments with the sensor for sensing either insertion of the card or the beginning of removal of the card (as noted in the abstract) in several configurations including internal to the connector or external to the connector. In each embodiment no matter where the sensor is located its function is the same. Applicant argues that sensor 406 in figure 4 "only functions when the card is 'fully inserted' into the associated connector" (remarks page 6 last paragraph). Certainly the switch/sensor in Klein makes contact with the card as it is being inserted into the slot and when the card is fully inserted the sensor will produce the card detection signal. Likewise as the card is being jostled or removed the sensor senses the movement and signals to the controller as

noted in the abstract and col. 4-6. This is basically the same as applicant's mechanism in which the sensor 60 is equivalent to the portion of sensor 406 in Klein which makes contact with the card. Therefore applicant's arguments in this regard are not persuasive.

Applicant also argues that "[a]pplicant's sensor is calibrated to detect initial motion and is not limited to sensing a complete connection associated with a full insertion into a connector slot." However, the claims are only concerned with detecting motion regarding removal of an already-inserted card to control the removal of power from the slot, which is exactly what the Klein reference also shows. Therefore this argument is also not persuasive.

With respect to claims 2-8,11,13-17, and 19 applicant argues that Klein does not show a sensor actuator or shutter assembly in sensor 406. Applicant further argues that the sensor switch 406 is only a mechanical switch that does not function as a sensor for detection motion prior to disconnect. Taking this second argument first, as noted above Klein shows several embodiments with different locations of the sensor used to control application or disconnection of power from the slot. In the embodiment of figure 4 this sensor is switch 406. As indicated by claim 8 of Klein the movement sensor for sensing movement of the card from the bus connector is a switch located outside the bus connector. So, the element 406 is indeed a movement sensor. With regard to applicant's argument that Klein does not show a sensor actuator or shutter assembly in sensor 406, it is noted that while Klein does not show an internal view of the elements making up the sensor/switch there are elements which must inherently be a part of this switch in order for it to operate in Klein's invention. As noted above in the rejection the sensor/switch 406 appears to be a sort of plunger style switch. In such a switch the "sensor actuator" would be the portion of the plunger engaged by the circuit card and the "shutter assembly" would be the pin part of the plunger that makes contact inside the switch to signal card detection. The patent to Castellonet noted above shows a motion detecting switch with a

plunger like that of Klein. Castellanet shows the internal workings of such a switch which is evidence that a switch such as the one shown by Klein would inherently include the shutter assembly and actuator as claimed. Therefore applicant's argument in this regard is also not persuasive.

Allowable Subject Matter

5. Claims 9 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art appears to show the sensor being calibrated in order to detect module motion of about .005". The nearest prior art seems to show that the pins of the connector are of varying lengths which allows power to be removed or applied with the difference in pin length being around 0.07". This is a full order of magnitude larger than the claimed amount of motion detection and detecting such a small amount of motion would not seem to have been obvious to one of ordinary skill in the art. In fact it would appear that detecting such a small amount of motion would likely be undesirable since power would be removed from the card after the slightest bit of movement.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2111

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn A. Auve whose telephone number is (571) 272-3623. The examiner can normally be reached on M-F 8:00 AM-5:30 PM, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn A. Auve
Primary Examiner
Art Unit 2111

gaa
January 6, 2005